

54
43
97.1
N-C-C
C
12 18
CH₂O
CH₂

We claim: -

1. A bioemulsifier comprising of protein content 50.5%, polysaccharide 43% and lipid content 3.8 %.
2. A bioemulsifier as claimed in claim 1 wherein the bioemulsifier showed peak esterase activity cell associated of order of 61.3 % and 38.6 % activity was secreted into the fermentation medium.
3. A bioemulsifier as claimed in claim 1 wherein increase in bioemulsifier concentration from 0.5 ml to 3 ml against a fixed volume of 6 ml almond oil resulted in a reduction of viscosity of almond oil by 40.3 %.
4. A bioemulsifier as claimed in claim 1 wherein the almond oil and water emulsion maintains its stability upto 90% upto 6 days at 37°C.
5. A bioemulsifier as claimed in claim 1 wherein the bioemulsifier retains 35% stability after 140 hours at 10°C.
6. A bioemulsifier as claimed in claim 1 is useful for preparing stable cosmetics (skin care product) and stable pharmaceutical ointment preparations.

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7. A process for production of bioemulsifier from *Acinetobacter* strains which comprises:

- (i) obtaining eight *Acinetobacter* strains from healthy human skin and two each from burn wounds and soil after enrichment of respective samples in enrichment medium,
- (ii) identifying the isolates upto genus level as per the chromosomal DNA transformation assay,

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- (iii) growing soil bacterial isolates between 30⁰ to 40⁰ C in a mineral salt medium supplemented with paptone and oil under shaking conditions at a rate around 150 rpm at a pH ranging between 4 to 9 for a period of 2-3 days,
- (iv) obtaining cell-free culture after centrifugation at about 8000 rev per minute for a period of about 20 minutes,
- (v) adding chilled acetone to the broth and incubating at about 4⁰ C for about 15 hours,
- (vi) collecting the precipitate by centrifugation, dissolving the precipitate in water and purifying by dialysis method, lyophilizing the dialysate to obtain the partially purified bioemulsifier.
8. A process as claimed in claim 7 wherein bacterial isolates used are 8 skin isolates selected and identified as *Ac.baumannii*, *Ac.lwoffii*, *Ac.junnii* and remaining two as *Ac.haemolyticus*.
9. A process as claimed in claim 7 wherein the burn wounds isolates were *Ac. baumannii*.
10. A process as claimed in claim 7 wherein soil isolates were from *Ac.calcoaceticus*.
11. A process as claimed in claim 7 wherein the oil used is selected from olive oil, palm oil, almond oil, castor oil.
12. A process as claimed in claim 7 wherein the mineral medium used is comprising 0.5 g k₂HPO₄, 1g NH₄Cl, 2 g Na₂SO₄, 2g KNO₃, 0.2 g MgSO₄.7H₂O, and 0.002 g FeSO₄.7H₂O.
13. A process as claimed in claim 7 wherein *Ac.junnii* SC14 isolated from healthy human skin exhibited maximum bioemulsifier production.

14. A process as claimed in claim 7 wherein the almond oil and water emulsion maintains its stability upto 90% at 37° C.
15. A process as claimed in claim 8 wherein the cell free supernatant of SC14 culture grown in presence of 18% almond oil exhibited 1759.8 EU ml⁻¹.
16. A process as claimed in claim 7 wherein yield of bioemulsifier is around 4 g L⁻¹.
17. A process as claim in claim 7 wherein the bioemulsifier contains protein 50.5%, polysaccharide 43% and 3.8% lipid.
18. A process as claimed in claim 7 wherein 61.3% of peak esterase activity was observed to be cell associated and 38.6 % activity was excreted into the fermentation medium.
19. A process as claimed in claim 7 wherein increase in bioemulsifier concentration from 0.5 ml to 3 ml against a fixed volume of almond oil resulted in a reduction of viscosity of almond oil by 40.3 %.